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THE NATH LAW GROUP 112 South West Street Alexandria, VA 22314			EXAMINER	
			DUCHENEAUX, FRANK D	
			ART UNIT	PAPER NUMBER
			1794	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,155	Applicant(s) DE CIUTIIS ET AL.
	Examiner FRANK D. DUCHENEAUX	Art Unit 1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 March 2009.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 March 2009 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-166/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's arguments, see page 8, filed 3/27/2009, with respect to the objection of figure 1 of the drawings have been fully considered and are persuasive. The objection of the drawing has been withdrawn.
2. Applicant's arguments, see page 8, filed 3/27/2009, with respect to the objection of reference number 5 of figure 2 of the drawings have been fully considered and are persuasive. The objection of the drawing has been withdrawn.
3. Applicant's arguments, see page 8, filed 3/27/2009, with respect to the objection to claims 2-10 have been fully considered and are persuasive. The objection of the claims has been withdrawn.
4. Applicant's arguments, see page 8, filed 3/27/2009, with respect to the rejection of claim 6 under 35 U.S.C. 112 2nd paragraph have been fully considered and are persuasive. The rejection of claim 6 has been withdrawn.

5. Applicant's arguments on pages 2-3, filed 3/27/2009 fail to address and/or correct all of the examiner's objections to the specification in the action dated 12/26/2008. As such, those objections not addressed and/or corrected have been repeated in the pertinent sections below.

6. Applicant's arguments, see page 8, filed 3/27/2009, with respect to the rejection of claims 8-9 under 35 U.S.C. 112 2nd paragraph have been fully considered and are persuasive. The rejection of claims 8-9 has been withdrawn.

Specification

7. The disclosure is objected to because of the following informalities: Page 4, line 34 (and elsewhere within the disclosure) the word "gage" should be rewritten "gauge." On page 5, beginning line 24, and elsewhere within the disclosure, the "component 1" should read as the "heat-protected thermoplastic component 1" consistently.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. **Claim 6** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Page 4, lines 16-17 of the specification discloses at least 1 to 5 folding pockets arrayed in sector of 10 to 30 mm. The specification fails to disclose that the quantity and/or arrangement of said pockets are situated with respect to a radius and, as such, claim limitations reciting a radius constitute new matter.

10. **Claim 11** is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Page 4, lines 18-20 of the specification discloses an aluminum foil of a thickness from 0.01 to 0.1 mm and up to 0.5 mm as does the disclosure on page 5, lines 31-34. However, the disclosure of the present invention fails to further limit said thickness to a range of from 0.01 to 0.05 mm and such, the limitations of claim 11 constitute new matter.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. **Claims 1-11** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the recitation of "partially compressed" is indefinite as it is unclear from the limitations to what extent the folding pockets must be compressed in order to qualify as being partially compressed.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

14. **Claims 1, 3-5, and 8-9** is rejected under 35 U.S.C. 102(b) as being anticipated by Ehrat et al. (CA 2027116 A1).

Regarding claims 1, 3-5, Ehrat teaches a composite panel having a core (12) of thermoplastic rigid foam (carrier layer) and covering layers (14, 16) of a ductile aluminum alloy (metallic) (page 5, lines 22-26 and figure 1) of 0.9 mm thickness (foil), said covering layer (14) comprises

a plurality of cross-sectionally pear-shaped beads (folding pockets, folded) (page 6, lines 12-13; figures 4 and 7, reference number 28), said thermoplastic rigid foam being, *inter alia*, polystyrene (synthetic) (page 2, lines 22-24) and that the bonding (at least partially connected) of the covering layers to the core is performed by means of an adhesive (page 3, lines 11-12). The examiner notes that figures 1-9 of the reference teach an unperforated upper cover layer and that said beads are clearly embedded in the foam core, which inherently provides a mechanical anchoring between the upper covering layer and the foam core as presently claimed. Ehrat continues to teach that the core contains glass reinforcing fibers (page 2, lines 25-29) and that the thickness of the covering layers, which consists of aluminum, is preferably in the range of 0.1 to 1.5 mm (foil) depending on material and use (page 3, lines 3-7). The examiner notes that the disclosure of the Ehrat reference discloses all the claim limitations of the current claims and therefore necessarily provides a heat-protected thermoplastic component as in the present invention.

Regarding claims 8-9, given that Ehrat discloses components identical to that as claimed by applicants it is clear that the Ehrat composite panel would inherently possess an identical peeling strength as presently claimed.

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. **Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehrat et al. (CA 2027116 A1) in view of Scouler et al. (US 5422150).

Regarding claim 2, Ehrat teaches a composite panel as in the rejection of claim 1 above. Ehrat fails to teach that the thermoplastic synthetic is an endless fiber reinforced thermoplast (LFT).

However, Scouler et al teaches a substrate clad with fiber-reinforced polymer composite (title), comprising a substrate clad with a fiber-reinforced polymer for use in high temperature applications, said polymer reinforced with 1/2" to 2" long fibers (LFT) (column 1, lines 6-12 and figure 2), said substrate comprising a cavity means which cooperates with the polymer composite to anchor the cladding to the substrate (column 4, lines 4-8). Scouler continues to teach that composites with chopped fibers of less than ½" in length do not form as strong a mechanical

interlock with channels formed in the substrate as longer (1/2" to 2") fibers (column 3, lines 66-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the core layer as taught by Ehrat with the long fibers as disclosed by Scoular towards a composite panel providing enhanced bonding between a metallic substrate and a thermoplastic layer disposed on said substrate as in the present invention.

18. **Claims 5 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehrat et al. (CA 2027116 A1).

Regarding claim 5 and 11, Ehrat teaches the composite panel as in the rejection of claims 1 and 4 above, but Ehrat fails to teach an aluminum foil with a thickness of from 0.01 to 0.1 mm and 0.01 to 0.05 mm.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the thickness of the covering layer to that as currently claimed for the intended application since it has been held that discovering an optimum value of a result-effective variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)) towards a composite panel comprising an aluminum covering layer, said covering layer thickness chosen so as to provide the thermoplastic underlayer with the requisite

degree of heat protection while simultaneously maintaining flexibility and/or cost effectiveness as in the present invention.

19. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehrat et al. (CA 2027116 A1).

Regarding claim 6, Ehrat teaches the composite panel as in the rejection of claim 1 above.

Ehrat also teaches that variation of the spacing of the beads, their depth, their mutual angle and/or their cross-sectional shape, virtually any bending of the composite panel can be achieved (page 3, lines 28-31). Ehrat continues to teach beads at regular spacings (page 6, lines 3—33), beads with variable spacings that allows for the composite panel to bend more in areas with less spacings (i.e. more beads) (page 6, lines 37-39 and page 7, lines 1-2) and that the arrangement of the beads including the spacing has the effect that a great variance of bending shapes can be achieved (page 7, lines 30-35). Ehrat further teaches that said composite having applications in vehicle construction such as vehicle shells and containers (page 4, lines 32-34 and page 5, lines 3-5). Ehrat fails to teach at least 1 to 5 folding pockets arrayed in a radius of 10 to 30 mm.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to adjust the spacings of the beads as taught by Ehrat for the intended application since it has been held that discovering an optimum value of a result-effective variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)) towards a

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composite panel that can be shaped into a given form for said intended application such a heat shield as in the present invention.

20. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehrat et al. (CA 2027116 A1) in view of Heucher et al. (US 5883172).

Regarding claim 7, Ehrat teaches the composite panel as in the rejection of claim 1 above, but fails to teach a hotmelt adhesive provided between the metallic foil and the thermoplastic carrier layer.

However, Heucher teaches a polyamide hotmelt adhesive (title) useful for bonding metals to plastics (abstract), said metals are aluminum-containing metals (claim 14) and said hotmelt adhesives are having high peel strengths and lower permeability to water vapor (column 5, lines 8-12).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the hotmelt adhesive as taught by Heucher as the adhesive that bonds the core to the covering layer of Ehrat towards a composite panel comprising increased adhesion strength between layers and diminished water permeability as in the present invention.

21. **Claim 10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ehrat et al. (CA 2027116 A1).

Regarding claim 10, Ehrat teaches the composite panel as in the rejection of claim 1 above.

Ehrat fails to teach a component for use as a vehicle undersize component. However, Ehrat teaches that the bent composite panels have application in vehicle construction (abstract) particularly in vehicle containers (page 5, lines 3-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to employ the composite panel of Ehrat as a component (i.e. container) for the underside of a vehicle given that the reference's invention provides for a layer of aluminum, which is inherently and well known as a heat reflective material, towards a component that provides heat shielding from the hot, heat-emitting components typically located on a vehicle's underside (i.e. manifold) as in the present invention.

Response to Arguments

22. Applicant's arguments, pages 9-10, filed 3/27/2009, in regards to the rejection of claims 1-4 and 8-10 under 35 U.S.C. 102(b) over Butler (US 5656353) have been fully considered but they are not persuasive. The examiner's complete response to arguments is outlined below.

Applicants argue that amended claim 1, which now recites a metallic foil that is unperforated, is not disclosed, taught, or suggested by the Butler '353 reference in that the Butler reference

teaches away from the unperforated metallic foil of the present claim, wherein said unperforated metallic foil comprises unperforated folding pockets, which are embedded in a carrier layer thereby providing a mechanical anchoring between the folding pockets and the carrier layer.

The examiner directs the applicants' attention to the rejection of claim 1 over Ehrat et al. (CA 2027116 A1) under 35 U.S.C. 102(b) in the current action, Wherein Ehrat teaches a composite panel comprising a thermoplastic core layer made of, *inter alia*, polystyrene, bonded to a covering layer made of thin aluminum layer, said aluminum layer comprise a plurality of pear-shaped beads that extend into the core layer. The examiner notes that, 1) the nonflat configuration of the pear-shaped beads teaches a folded pocket, 2) said shape extending into a core layer as demonstrated in figure 4 of the reference, necessarily provides for mechanical anchoring between the core layer and the aluminum covering layer and 3) the Ehrat reference does not teach that the covering layer has been pierced or punctured along the surface of the aluminum covering layer, which denotes that said covering layer is unperforated. As such, the teachings of the Ehrat reference, as annotated in the rejection of claim 1 above, clearly anticipate the limitations of claim 1 of the present invention.

23. Applicant's arguments, pages 10-11, filed 3/27/2009, in regards to the rejection of claim 5 under 35 U.S.C. 103(a) over Butler (US 5656353); in regards to the rejection of claim 6 under 35 U.S.C. 103(a) over Butler (US 5656353) in view of Butler (US 6401961); and in regards to the rejection of claim 7 under 35 U.S.C. 103(a) over Butler (US 5656353) in view of Wank et al.

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(US 4810321) and in further view of Heucher et al. (US 5883172) have been fully considered but they are not persuasive. The examiner's complete response to arguments is outlined below.

Applicants argue that none of the references disclose, teach or suggest the unperforated metallic foil of the presently amended claim 1, wherein said unperforated metallic foil comprises unperforated folding pockets, which are embedded in a carrier layer thereby providing a mechanical anchoring between the folding pockets and the carrier layer.

The examiner directs the applicants' attention to the rejection of claim 1 over Ehrat et al. (CA 2027116 A1) under 35 U.S.C. 102(b) in the current action and to the rejections under 35 U.S.C 103(a) over Ehrat et al. (CA 2027116 A1); Ehrat et al. (CA 2027116 A1) in view of Scouler et al. (US 5422150); and Ehrat et al. (CA 2027116 A1) in view of Heucher et al. (US 5883172) in the current action. The applicants' attention is also directed to the examiner's previous response to arguments annotated above in the current action. The examiner notes that the Ehrat reference alone teaches all of the limitations of amended claim 1 of the present invention and further that Ehrat, either alone or in combination with the above-noted references, render obvious currently amended dependent claims 2-10.

The examiner notes that while Heucher does not disclose all the features of the present claimed invention, Heucher is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871,

881 (CCPA 1981). Rather this reference teaches a certain concept, namely hotmelt adhesives useful for bonding metals to plastics, and in combination with the primary reference, discloses the presently claimed invention.

24. Applicant's arguments, page 12, filed 3/27/2009, in regards to the patentability of newly added dependent claim 11 have been fully considered but they are not persuasive. The examiner's complete response to arguments is outlined below.

Applicants' argue that newly added claim 11, which depends from currently amended claim 1, is patentable over the cited prior art for at least the reason of its dependency from claim 1.

The examiner directs the applicants' attention to the rejection of claim 1 over Ehrat et al. (CA 2027116 A1) under 35 U.S.C. 102(b) in the current action, the rejection of claim 11 Ehrat et al. (CA 2027116 A1) under 35 U.S.C. 103(a) in the current action, and the examiners response to arguments in regards to claim 1 annotated above. The Ehrat reference as discussed above renders obvious the limitations of newly added claim 11 of the present invention.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANK D. DUCHENEAUX whose telephone number is (571)270-7053. The examiner can normally be reached on M-Th, 7:30 A.M. - 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie E. Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available

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through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FDD

/Callie E. Shosho/
Supervisory Patent Examiner, Art Unit 1794